

In re Patent Application of:

PHILLIPS ET AL

Serial No. **10/706,142**

Filed: **11/12/2003**

REMARKS

Claims 1 and 3-7 are currently pending in this application.

Claims 1 and 7 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Uyama et al.

More particularly, the Office Action states that Uyama et al discloses the basic claimed method lacking essentially -

- 1) that the optical interference pattern -ie, diffraction grating or holographic image- and the color shifting optical coating are formed on opposite surfaces of the substrate and
- 2) that the security article is necessarily hot-stamped to an object. The office action states that the reference provides an adhesive layer by which the security laminate would be attached to the object.

In the Applicants' response dated 31 October 2006, Applicants provided a declaration and accompanying Exhibits. The Applicants have confirmation that these exhibits were received by the United States Patent and Trademark Office as shown by a post card receipt, however these Exhibits were apparently never received by the Examiner.

Newly fabricated samples (Exhibits A-E) accompany this response and the applicants have provided two new declarations which unequivocally state that there are significant visual differences in the samples having the coating and hologram are on

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opposite sides of the substrate and the samples having the coating and hologram are on the same side of the substrate.

The Examiner in the Office Action states that:

"the placement of the color shifting layer with respect to the interference pattern would have no bearing on the appearance of the color shift property and that of the security article."

The Examiner further states:

"Concerning this the examiner's rationale given in the Final Rejection of case serial number 10/705,610, paragraphs 7 and 8, is hereby made of record. To wit, the examiner stated that it made no difference in Uyama et al whether the light is transmitted or reflected through the color shift coating, since the reference teaches that the color shift will be observed for either - see column 6, lines 1-11 and 25-34 of Uyama et al. Since the Substrate is transparent, it would not affect the color shifting property of the color shifting layer. Applicants should note as pointed out in the aforementioned final, that the light path for the instant application and that for Uyama et al are as follows:

Instant: Incident light-interference pattern-Substrate-Color Shift coating

Uyama et al: Incident light-Substrate-interference pattern-Color Shift coating

Unless the substrate has some optical property in either the instant or in Uyama et al- and nothing is disclosed of such

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property, as the substrates are said to be transparent-the incident light clearly undergoes the same path and would therefore be subjected to the same effects due to the optical effects of the layers."

According the Examiner, "it makes no difference in Uyama et al whether the light is transmitted or reflected through the color shift coating, since the reference teaches that the color shift will be observed for either - see column 6, lines 1-11 and 25-34 of Uyama et al."

The quotations from the Examiner, set forth above, clearly demonstrate that the results and benefits addressed in the accompanying declarations are unexpected. There are visible and substantial differences in optical effect depending on whether the color shifting layer and the holographic layers are placed on the same or on different sides of the substrate. These differences were unexpected by the examiner and by others.

Applicants do not understand the relevance of the Examiner's comment above. The difference between the Applicants' claimed invention and Uyama's is not whether the light is transmitted or reflected through the color shift coating. The difference is relates to whether the color shifting coating and its color shifting effects and the hologram or diffraction grating and the diffractive effects are separated by the substrate. It is not mere conjecture that there is a distinct visual difference in viewing the samples accompanying this response when looking at samples made with the hologram and color shifting coating on opposite

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sides of the substrate, and those made with the hologram and color shifting coating on a same side of the substrate; it is a fact that there is a distinct visual difference. The visual difference is a function of the space or separation of the hologram from the color shifting coating provided by the thickness of the light transmissive substrate. Since the samples made with separation are clearly visually different there are no grounds for saying that they are the same. They are not. The two side-by-side samples on any LENTA card of the exhibits are visually different and are structurally different. This is due to some interaction that occurs when the color shift coating and diffractive structure are on the same side; these effects are at least partially decoupled when separated by the substrate in the samples made in accordance with the claimed invention.

The Examiner states: Since the Substrate is transparent; it would not affect the color shifting property of the color shifting layer.

Applicants do not fully understand the relevance of the statement above. Applicants have not suggested that the transparent substrate affects the color shifting property.

The claimed invention is a structure that has a color shifting coating AND a diffractive structure or hologram separated from each other by a light transmissive substrate. When one places the color shifting layer upon a diffractive structure there is significant interaction between the two layers. Thus one sees the color shifting effects, the holographic effects, and effects

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resulting in interaction between the color shifting effects and the holographic effects. When one places and separates the color shifting coating and the diffractive structure by placing each on opposite sides of the substrate, there is some decoupling of these effects and a distinct visual difference as can be seen by viewing the samples. These differences are discussed in the accompanying declarations and are visible when viewing the attached Exhibits A-E.

The Examiner has made the following statement:

Unless the substrate has some optical property in either the instant or in Uyama et al- and nothing is disclosed of such property, as the substrates are said to be transparent-the incident light clearly undergoes the same path and would therefore be subjected to the same effects due to the optical effects of the layers."

Applicants respectfully disagree with the Examiner's comment above. Applicants are in agreement that the substrate is light transmissive, however the Applicants would like to make clear that the incident light clearly undergoes a different path in the instant application and in Uyama.

As the Examiner points out:

Instant: Incident light-interference pattern-Substrate-Color Shift coating

Uyama et al: Incident light-Substrate-interference pattern-Color Shift coating

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What the Applicants would like to make clear is that physically separating the diffractive structure from the color shifting coating has a profound influence on the light path and on what the viewer sees. The Examiner can see this by viewing the samples and "this" is the Applicants' invention. It is apparent from the Examiner's comments that this is unexpected; however it is what the Applicants have invented and discovered, and provides a physical and visual difference from Uyama's teaching.

Claim 1 in its entirety claims a new method of forming a security article wherein forming two particular structures on opposite sides of a light transmissive substrate; a hologram or grating on one side and a color shifting structure on a second side. It is the invention of disposing these on opposite sides of a light transmissive structure which substantially decouples their optical effects that distinguishes this invention from the prior art.

Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uyama et al. in view of Coombs et al. for reasons of record.

In this Office Action, the Examiner states that Applicants' arguments have been considered but are moot in view of the new ground(s) of rejection.

The Examiner states that the rejection remains essentially the same as the previous rejection, and that other than attorney

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arguments, there is nothing of record to indicate that the instant article is significantly improved over that of the Uyama et al.

Applicants have provided samples of structures made with a hologram and color shift coating on a same side of a light transmissive substrate, of structures made in accordance with the invention defined in claim 1 wherein the structures are made with the color shift coating and hologram on different sides of a light transmissive substrate. The differences are significant.

Applicants have provided a declaration under Rule 132 which factually states that the article as claimed in the instant claims has distinct advantages over the structure taught by Uyama et al.

A second declaration under 37 CFR 1.132 is also included indicating how the samples were made and attesting to their visual effects.

With regard to the rejection of claim 3 in view of Uyama and Coombs, Uyama et al. teach a transparent hologram seal that can be applied as a security article. Uyama appears to place the hologram and color shifting layer on the same side of a light transmissive substrate. The color shifting layer is an evaporation coating layer comprised of alternatively arranged high and low refractive index layers, such that it changes color as light either transmits or reflects through the layer when the viewing angle is changed. The multilayer evaporation layer serves as the color shifting multilayer optical coating. It should be further noted that Uyama's absence of a reflector layer as defined in claim 3 of the

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instant claims, makes his device inferior to the Applicants' embodiment having a reflector layer yielding high chroma. For Uyama et al. to have high chroma, his device is best placed on a black background. This requirement is obviated by the Applicants' structure by inclusion of a reflective layer.

Neither Uyama et al. nor Coombs et al. suggest having a hologram and color shifting coating on opposite sides of the substrate. Since claim 3 is dependent on claim 1, it imports this limitation which distinguishes from the prior art. Furthermore, having the reflector layer spaced at least the thickness of the light transmissive substrate from the hologram, provides a visual effect due to the hologram being spaced from the background color shifting coating. Combining Uyama et al. and Coombs et al. would not yield such a structure.

Claims 4 through 7 import their patentability from claim 1.

In view of the reasons presented above, it is believed that all of the claims are now in condition for allowance.

Reconsideration of this application is respectfully requested

Applicants request confirmation of consideration of the IDS previously faxed to the U.S. Patent and Trademark Office on April 28, 2006.

Also, please note that a petition for a one-month extension of time is being filed herewith under separate cover.

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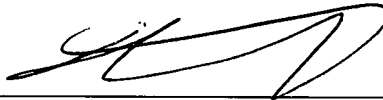
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Should any minor informalities need to be addressed, the Examiner is encouraged to contact the undersigned attorney at the telephone number listed below.

Please charge any shortage in fees due in connection with the filing of this paper, including Extension of Time fees, to Deposit Account No. 50-1465 and please credit any excess fees to such deposit account.

Respectfully submitted,



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May 1, 2007
Date